

REMARKS

Upon entry of this Amendment, claims 1-43 are all the claims pending in the application. Claims 40-43 have been added. Applicant thanks the Examiner for the indicated allowability of claims 2-7, 38 and 39. Claims 1 and 8-37 presently stand rejected and claims 1-37 are objected to because of informalities. Claims 1, 8 and 30 have been amended to obviate the Examiner's claim objection. Claim 35 has also been amended. For the reasons set forth below, Applicant respectfully traverses the claim rejections.

Summary of the Office Action

Claims 35 and 36 are rejected under 35 U.S.C. § 102(b) as being anticipated by Teramae et al. (EP 1 023 997); Claims 35 and 37 are rejected under 35 U.S.C. § 102(e) as being anticipated by Nagoshi et al. (USP 6,224,182); Claims 1, 8, 13, 14, 17 and 30 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Nagoshi et al. in view of Bartky et al. (USP 4,973,981); Claims 9-12 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Nagoshi et al. in view of Bartky et al. as applied to claim 1, and further in view of Arthur et al. (USP 6,049,898); Claims 15, 16, 18-29, 31 and 33 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Nagoshi et al. in view of Bartky et al. as applied to claims 14, and 17, and further in view of Teramae et al. (EP 1 023 977); Claim 32 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Nagoshi et al. in view of Bartky et al. and Teramae et al. as applied to claim 23, and further in view of Arthur et al.; and Claim 34 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Nagoshi et al. in view of Bartky et al. and Teramae et al. as applied to claim 23, and further in view of Chang et al. (USP 5,541,628).

Argument

The Examiner asserts that Bartky “discloses classifying pressure generating elements utilized in an ink jet recording head based on an identification of a *natural period* of ink pressure fluctuation obtained from a plurality of measurements (abstract, column 3, lines 9-25)”.

However, Applicant submits that the measurements disclosed in Bartky do not amount to an identification of a “natural period”, as claimed.

In particular, in the present specification, at page 2, lines 8-14, it is disclosed that,

in the recording head employing the piezoelectric vibrator, pressure vibrations having a natural period are excited, which is mainly determined by the thickness and/or area of the resilient plate, shape of the pressure chamber, compressibility of the ink, etc.

Thus, by measuring the variety of parameters outlined above, it is possible to determine the ink pressure fluctuation in the pressure chamber, as recited in claim 1.

In comparison, Bartky discloses;

A method for testing body components of pulsed droplet deposition apparatus comprises applying a variable frequency voltage to the electrodes of each of a number of ***selected channel wall elements***. The resulting impedance variations are used to determine the ***natural frequencies of the selected wall elements*** which, in turn, are used to determine whether the compliance ratios of the selected wall elements and the droplet liquid to be used therewith lies within a desired range of values. (Abstract, emphasis added)

Thus, Bartky discloses measurements being taken to determine the respective natural frequencies of selected wall elements. Bartky does ***not*** disclose a natural period of the ink pressure fluctuation in the pressure chamber, as disclosed and claimed. For at least this reason,

and because Nagoshi fails to compensate for the deficiency of Bartky, the proposed combination of Nagoshi and Bartky does not teach or otherwise disclose all the recited features of claim 1. Accordingly, the obviousness rejection of claim 1 should be withdrawn. Moreover, at least based on their dependency on claim 1, all of claims 2-37 should be found allowable over the prior art of record as well.

Furthermore, in regard to claims 35-37, Applicant submits that neither Nagoshi nor Teramae disclose an ink jet recording head with a rank indicator as claimed along with all the features inherent in an ink jet recording head produced by the method of claim 1. Support for the rank indicator feature can be found in the specification as filed, for example, at page 33, line 23 - page 35, line 25.

Accordingly, for this additional reason the §102 rejection of claim 35-37 should be withdrawn.

Patentability of New Claims

For additional claim coverage merited by the scope of the invention, Applicant has added new claims 40-43. Applicant submits that the prior art does not disclose, teach, or suggest the combination of features contained therein. For example, at least based on their dependency of claim 1, for the same reason as set forth above in regard to claim 1, claims 40-43 should also be found allowable.

Conclusion

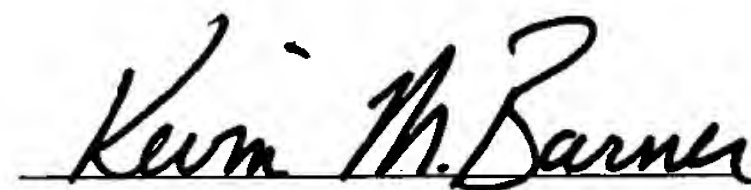
In view of the foregoing remarks, the application is believed to be in form for immediate allowance with claims 1-43, and such action is hereby solicited. If any points remain in issue

Amendment under 37 C.F.R. § 1.116
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which the Examiner feels may be best resolved through a personal or telephone interview, he is kindly requested to **contact the undersigned** at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

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